



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,975	12/29/2000	Charles Elkins	V199-1933	9062
7590	02/10/2006		EXAMINER	
Thomas E. Donohue Artz & Artz, PC Suite 250 28333 Telegraph Road Southfield, MI 48034			PRONE, JASON D	
			ART UNIT	PAPER NUMBER
			3724	
DATE MAILED: 02/10/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/751,975

Applicant(s)

ELKINS ET AL.

Examiner

Jason Prone

Art Unit

3724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18, 20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18, 20, and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

### DETAILED ACTION

1. The indicated allowability of claims 18, 20, and 21 is withdrawn in view of the reference(s) to Allaire et al., Sutton, and Sosnowski. Rejections based on the reference(s) follow.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over to Allaire et al. (5,303,861) in view of Sutton (4,648,298), and further in view of Sosnowski (6,136,131). Allaire et al. discloses a method of separating a work piece (14) with pre-scored planes (28), aligning one of the pre-scored planes with a splitting element (18), loading the work piece to reduce flex (24) and inducing torque on the work piece such that the work piece is forced onto the splitting element and breaks along the pre-scored plane (20).

However, Allaire et al. fail to disclose the work piece is a multiple array printed circuit board, affixing a removable shield element to an individual circuit board, and the loading step is done on the shield element.

Sutton teaches that it is old and well known to separate a multiple array printed circuit board along a pre-scored plane (32). Therefore, it would have been obvious to

Art Unit: 3724

one of ordinary skill in the art, to have provided Allaire et al. with a circuit board work piece, as taught by Sutton, to perform its intended use on an alternate work piece.

Sosnowski teaches that it is old and well known for circuit boards to have a removable shield element (10). In Allaire et al., replacing work piece (14) with work piece (32), of Sutton, that incorporates a shield, from Sosnowski, would allow the loading means (24), of Allaire et al., load the shield of the work piece. Therefore, it would have been obvious to one of ordinary skill in the art, to have provided Allaire et al. in view of Sutton with a shield, as taught by Sosnowski, to protect the components of the circuit board while the arrays are being separated.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over to Allaire et al. in view of Sutton, and further in view of Sosnowski. Allaire et al. discloses an apparatus separating a work piece (14) with pre-scored planes (28), at least one splitting element positioned along one of the pre-scored planes (18), at least one torque inducing element using surface loading to mechanically force the work piece onto the at least one splitting element and thereby breaking the work piece along the pre-scored plane (20), and a transport element for automatically aligning one of the pre-scored planes with the at least one splitting elements (16).

However, Allaire et al. fail to disclose the work piece is a multiple array printed circuit board, the at least one torque inducing element applies surface loading to the multiple board array by way of a shield element to prevent loading the plurality of electrical components.

Sutton teaches that it is old and well known to separate a multiple array printed circuit board along a pre-scored plane (32). Therefore, it would have been obvious to one of ordinary skill in the art, to have provided Allaire et al. with a circuit board work piece, as taught by Sutton, to perform its intended use on an alternate work piece.

Sosnowski teaches that it is old and well known for circuit boards to have a removable shield element (10). In Allaire et al., replacing work piece (14) with work piece (32), of Sutton, that incorporates a shield, from Sosnowski, would allow the at least one torque inducing element (20), of Allaire et al., load the shield of the work piece and not the electrical components. Therefore, it would have been obvious to one of ordinary skill in the art, to have provided Allaire et al. in view of Sutton with a shield, as taught by Sosnowski, to protect the components of the circuit board while the arrays are being separated.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over to Allaire et al. in view of Sutton, and further in view of Sosnowski. Allaire et al. discloses a method of separating a work piece (14) with pre-scored planes (28), aligning one of the pre-scored planes with a splitting element (18), and inducing torque on the work piece such that the work piece is forced onto the splitting element and breaks along the pre-scored plane (20).

However, Allaire et al. fail to disclose the work piece is a multiple array printed circuit board, the inducing torque step includes transferring load from a torque inducing element through a shield element into a portion of the multiple board array.

Sutton teaches that it is old and well known to separate a multiple array printed circuit board along a pre-scored plane (32). Therefore, it would have been obvious to one of ordinary skill in the art, to have provided Allaire et al. with a circuit board work piece, as taught by Sutton, to perform its intended use on an alternate work piece.

Sosnowski teaches that it is old and well known for circuit boards to have a removable shield element (10). In Allaire et al., replacing work piece (14) with work piece (32), of Sutton, that incorporates a shield, from Sosnowski, would allow the at least one torque inducing element (20), of Allaire et al., transfer the load through the shield of the work piece to a portion of the multiple board array. Therefore, it would have been obvious to one of ordinary skill in the art, to have provided Allaire et al. in view of Sutton with a shield, as taught by Sosnowski, to protect the components of the circuit board while the arrays are being separated.

### ***Response to Arguments***

6. After further consideration, the examiner discovered the above rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Prone whose telephone number is (571) 272-4513. The examiner can normally be reached on 7:30-5:00, Mon - (every other) Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan N. Shoap can be reached on (571) 272-4514. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 07, 2006



Patent Examiner  
Jason Prone  
Art Unit 3724  
T.C. 3700